

Request for Reconsideration under 37 C.F.R. § 1.111  
U.S. Appln. No. 09/983,082

Claims 1-4 are rejected under 35 U.S.C. § 102(b) as being anticipated by Zachman et al. (5,111,406).

#### Analysis

Claim 1 is directed to a method for boring a hole in a circuit board. In particular, the method includes a first step of acquiring a first position data for positioning the hole in the board by using a positioning device that has an image pick-up function. The second step involves boring the hole in the board by using a working apparatus that has an image pick-up function and a boring function.

The second step includes a sub-step of acquiring a second position data for positioning the board in the working apparatus, determining the boring position on the board in the working apparatus, and boring the hole at the predetermined position in the board. The boring position is determined by synthesizing the first position data and the second position data.

With the claimed invention, the panel alignment and pattern alignment can be performed for multiple circuit boards more quickly than conventional methods (see Figs. 3 and paragraphs [0044 – 0051]).

Zachman appears similar to the prior art discussed in the background portion of the application. Zachman discloses a method of pre-alignment performed in the chamber 50 utilizing a camera (not shown) when a sample tray 24 having a fixture 42 is slid into the chamber 50 (see cols. 4-5). Coordinates of the "blueprint" and the measured locations are analyzed with an algorithm (see col. 6).

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Although Zachman appears generally relevant, Zachman does not disclose more than one image pick-up unit. The image pick-up unit in the chamber is the only image pick-up unit disclosed therein. There is not disclosed both a positioning device having an image pick-up function and a working apparatus having an image pick-up function. Thus, first and second position data are not obtained by the same method as the claimed invention, wherein second position data is acquired by the image pick-up function of the working apparatus, and first position data is acquired by the image pick-up function of the positioning device.

This provides an advantage for the present invention over the prior art. As noted in paragraph [0025], by separating the acquisition of the first and second position data, first position data can be acquired for one circuit board while another circuit board undergoes synthesis of its first and second position data.

Thus, the present invention greatly shortens the time required to bore holes in a plurality of boards as compared to Zachman.

Since Zachman fails to teach or suggest all the steps recited in claim 1, claim 1 is patentable.

Claims 2 and 3 are patentable for at least the same reasons as claim 1, by virtue of their dependency therefrom.

Claim 4 is directed to the boring device for a circuit board. A positioning device includes a first image pick-up unit, a first data processing unit, and a movement unit. A working apparatus includes a second image pick-up unit, a second data processing unit, a second movement unit and a boring unit.

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Applicant submits that Zachman does not disclose a second image pick-up unit. Zachman only discloses an image pick-up unit in the chamber 50 and makes no mention of a second image pick-up unit. Thus, as with claim 1, Zachman fails to teach or suggest all the features and capabilities of the present invention, wherein first and second position data is acquired by separate units.

In view of the foregoing, claim 4 is patentable.

#### Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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